



Module PMRF-ISSS068/2022

High Voltage Engineering Fundamentals

Name of the PMRF student

Soumyadeep Chowdhury

Required background of the students taught

Undergraduate students in Electrical and Electronics Engineering, Masters students in Power System, High Voltage Domain, with basic knowledge of physics and mathematics

Online session coordinator

Will be chosen from the list of registrants



Schedule of the module

Start Date : 5th March 2023

End Date : 29rd April 2023 (Tentative)

Classes on: Saturday (7.00pm - 8.30 pm)
Sunday (11:00am-12:30pm)

Last Date for course registration : 2nd March 2023

Details of the content of the module

This module will give an insight into the various aspects of high voltage engineering. It will start with the basics of HV Engineering, need for high voltages and focus more on the research aspects of HV Engineering.

1. Introduction to High Voltages

- Classification of LV, MV ,HV, EHV & UHV
- Need for High Voltages
- Types of HV, natural and man-made

2. Generation of High Voltages

- Generation of HVDC, HVAC and Impulses

3. Measurement of High Voltages

- Different Measurement techniques for HVDC, HVAC, Impulses,
- Measurement techniques for High Currents

4. Breakdown Phenomenon

- Mechanisms of Breakdown in Solid, Liquid and Gaseous Dielectrics.
- Breakdown in Long Air-Gaps

5. Research Domains in High Voltage Engineering

6. Brief Discussion on Lightning Physics

P.S: Theory as well as numerical will be solved. Few HV generation circuits can be simulated based on student's demand.

Meeting link : Will be shared later

[Link](#)

Contact email ID: issforum@gmail.com

Registration link:

<https://forms.gle/Aa9Dehyu5wmJcHJC9>